IN THE CLAIMS:

1. (ORIGINAL) A method for detecting the presence of an analyte in a sample, said analyte being chemically non-reactive with lipids or with a polymer having an absorption band which may be shifted from a first wavelength in the visible region to a second wavelength in the visible region, which comprises:

a) providing a polymeric matrix comprising said lipids and said polymer;

b) introducing into said sample or into said polymeric matrix means enabling said analyte to cause a non-chemical change accompanied by a color transition in said polymeric matrix; and

c) contacting the sample with the polymeric matrix and observing a color transition of the matrix, indicating the presence of the analyte.

2. (ORIGINAL) A method according to claim 1, wherein the analyte is an ion and the means allowing said ion to cause a non-chemical change in the polymeric matrix are ionophores.

3. (ORIGINAL) A method according to claim 2 wherein the ion is a metal cation.

4. (ORIGINAL) A method according to claim 1, wherein the analyte is a biological ligand and the means allowing said ligand to cause a non-chemical change in the polymeric matrix are provided by a receptor having the capability to bind said ligand, said receptor being linked to a spacer arm located within the lipid domain of said matrix.

5. (CURRENTLY AMENDED) A method according to claim 4, wherein the biological ligand is selected from the group consisting of antibodies, antigens and epitopes and the spacer arm is a peptide or one or more alkyl chains. ~~or more alkyl chains.~~

6. (ORIGINAL) A method according to claim 1, wherein the analyte is a peptide.

7. (ORIGINAL) A method according to claim 6, wherein the analyte is a short membrane peptide containing no more than 50 amino acids.

8. (ORIGINAL) A method according to claim 6, wherein the analyte is a membrane protein.

9. (ORIGINAL) A method according to claim 1, wherein the polymer is polydiacetylene obtained by polymerization of a monomer selected from the group consisting of tricosadiynoic acid, tricosadiynoic methyl esters, pentacosadiynoic acid and pentacosadiynoic methyl esters.

10. (CURRENTLY AMENDED) A ~~polymer~~ method according to claim 1, wherein the lipids are selected from the group consisting of phospholipids, sphingolipids, and ceramides.

11. (CURRENTLY AMENDED) A method ~~for distinguishing between a native peptide and an analogue thereof~~ according to claim 6, which comprises the steps of:

a) providing a polymeric matrix comprising lipids and a polymer, said polymer having an absorption band which may be shifted from a first wavelength in the visible region to a second wavelength in a visible region; and

b) contacting the polymeric matrix with a sample suspected of containing said peptide or an analogue thereof, and comparing the color observed with the color expected in the presence of the native peptide, to determine whether the native peptide or an analogue thereof is present in the sample and to distinguish between the native peptide and an analogue thereof.

12. (CURRENTLY AMENDED) A method ~~for distinguishing between a first analogue of a native peptide and a second analogue thereof~~ according to claim 6, which comprises the steps of:

a) providing a polymeric matrix comprising lipids and a polymer, said polymer having an absorption band which may be shifted from a first wavelength in the visible region to a second wavelength in a visible region; and

b) contacting the polymeric matrix with a sample suspected of containing ~~said~~ a first analogue of said peptide or ~~said~~ a second ~~anlogue~~ analogue of said peptide, and comparing

the color observed with the color expected in the presence of said first analogue or said second analogue, to determine which analogue is present in the sample and to distinguish between said first analogue and said second analogue.

13. (CURRENTLY AMENDED) A method ~~for the evaluation of the biological activity of an analogue of a native peptide~~ according to claim 6, which comprises the steps of:

a) providing a polymeric matrix comprising lipids and a polymer, said polymer having an absorption band which may be shifted from a first wavelength in the visible region to a second wavelength in a visible region; and

b) contacting the polymeric matrix with a sample containing ~~said peptide analogue~~ an analogue of said peptide, and comparing the color observed with the color expected in the presence of the native peptide;

c) assessing the difference between the color observed and the color expected, to evaluate the similarity between the biological activity of said analogue and said native peptide in membrane-related system.